YAMAHA CX-50

Natural Sound Stereo Control Amplifier

Préamplificateur stéréro de la série "Natural Sound"

"Natural Sound"-Stereoregler

Stereokontrollförstärkare med naturligt ljud

Amplificatore di controllo stereo a suono naturale

OWNER'S MANUAL MODE D'EMPLOI BEDIENUNGSANLEITUNG BRUKSANVISNING MANUALE DELL'UTENT

Thank you for purchasing the YAMAHA CX-50 control amplifier.

ABOUT THIS MANUAL

To obtain the finest performance from your new control amplifier, please read this manual carefully, keeping it handy for future reference.
After you know which PRECAUTIONS to take, the section CONNECTIONS will show you how to hook up the CX-50 to your power amplifier and other stereo components. FRONT PANEL CONTROLS AND THEIR FUNCTIONS introduces the CX-50's switches and knobs, while operation of this control amplifier is explained in more detail in the OPERATIONS section. If you have any trouble, the final section on TROUBLESHOOTING tells you what to do before contacting your YAMAHA dealer.

CONTENTS

IMPORTANT:
Please record the serial number of your unit in the space below.
Model: CX-50
Serial No.:

SAFETY INSTRUCTIONS

OWNER'S MANUAL

Keep this manual in a safe place for future reference.

LOCATION

Avoid placing your CX-50 in direct sunlight or close to a source of heat. Also avoid locations in which the device is likely to be subjected to excessive dust, cold or moisture.

VENTILATION

The openings on the cabinet ensure the ventilation of the amplifier. If these openings are obstructed, the temperature inside the cabinet will rise rapidly and eventually damage the circuits. Therefore, avoid placing objects against these openings and do not install your amplifier in a place such that the flow of air through the ventilation openings could be impeded.

HANDLING

■ Power cord

When removing the power plug from the wall outlet, always pull directly on the plug. Never yank the cord as this may result in damage to the cord and possibly a short-circuit.

If you do not intend to use this unit for an extended period of time, it is advisable to unplug the power cord.

■ Switches and knobs

Avoid applying excessive force to the switches and knobs.

■ Relocation

Before moving your amplifier, be sure to unplug the power cord and remove all other connecting cables.

IN CASE OF TROUBLE

■ Troubleshooting Chart

Consult the Troubleshooting Chart for advice on the common operation errors before concluding that your amplifier is faulty.

■ Servicing

Do not open the cabinet or attempt to make repairs by yourself, as this may aggravate the damage and expose you to an electrical shock.

■ Object and liquid entry

See to it that foreign objects or spilled liquids do not enter inside the cabinet. Should this case arise, consult your YAMAHA dealer.

CLEANING

Wipe off dust with a dry soft cloth. To remove dirt or fingermarks, use a soft damp cloth then dry immediately with a clean cloth. Do not use alcohol, thinners or other chemical solvents since they may damage the finish or remove the panel lettering.

Do not use any aerosol sprays near this unit as these products can easily get into the unit and damage the circuitry.

Special instructions for the U.K.

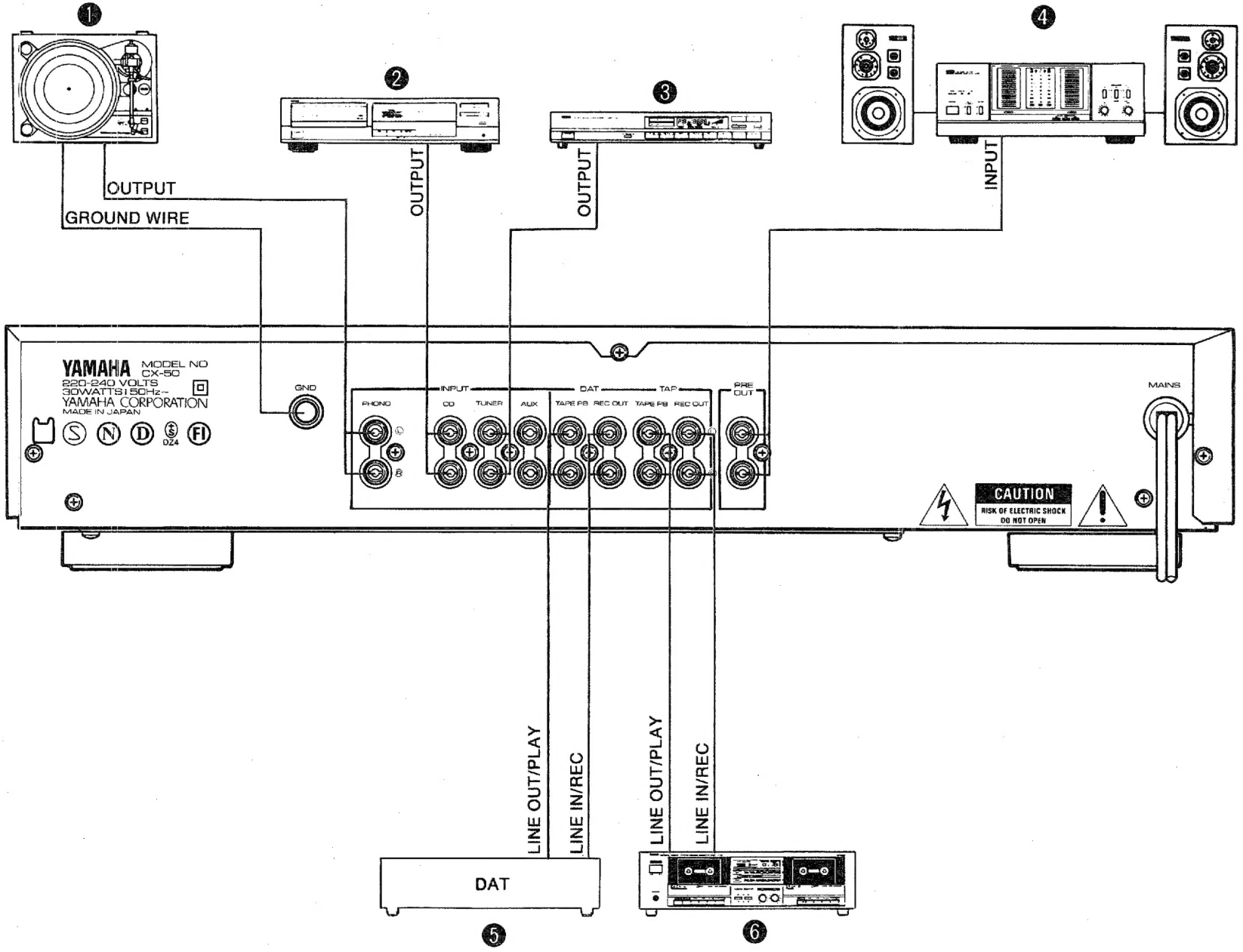
THE WIRES IN THE MAINS LEAD ARE COLOURED IN ACCORDANCE WITH TH FOLLOWING CODE:

Blue: NEUTRAL
Brown: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspor with the coloured markings identifying th terminals in your plug, proceed as follow The wire which is coloured BLUE must b connected to the terminal which is marke with the letter N or coloured BLACK. Th wire which is coloured BROWN must be connected to the terminal which is marke with the letter L or coloured RED.

CONNECTION DIAGRAM **ANSCHLUBDIAGRAMM** **SCHEMA DI COLLEGAMENTO**

SCHEMA DES CONNEXIONS **KOPPLINGSDIAGRAMMET**



CONNECTIONS

The connection diagram is provided on page 3.

❶ TURNTABLE
❷ CD PLAYER
❸ TUNER
❹ POWER AMPLIFIER
❺ DAT DECK
❻ TAPE DECK

Make sure the left (L) and right (R) channels are connected consistently between components.

NOTE:

Before making or altering any of the connections described below, be sure to turn off all units.

Always check that

a) the RCA plug pins of the connecting cords are clean,
b) the left and right channels of all units correspond, and
c) connections are made securely.

POWER AMPLIFIER

Connect the PRE OUT jacks of the CX-50 to the INPUT jacks of your power amplifier.

AUDIO SOURCES

■ TURNTABLE

Plug the turntable's output cords into the INPUT PHONO jacks. Partly unscrew the CX-50 GND terminal knob and connect the turntable's ground wire, then tighten the knob. Grounding the turntable in this manner usually produces the least hum. However, the ground wire may be left disconnected if this gives better results.

■ CD PLAYER

Connect the output cords of your compact disc player to the INPUT CD jacks.

■ TUNER

Plug the cords from your tuner's output jacks into the INPUT TUNEI jacks.

■ DAT DECK

Connect the LINE OUT (or equivalent) jacks of your Digital Audio Tape deck to the DAT TAPE PB (playback) jacks, and the deck's LINE IN jacks to the REC OUT terminals. The CX-50's DAT terminals can also be used for connection of a second analog tape deck instead of a DAT recorder.

■ TAPE DECK

Connections are the same as described above for a DAT deck - the LINE OUT jacks of a tape deck are routed to the CX-50 TAPE PB terminals, while the tape deck's LINE IN jacks are connected to the REC OUT terminals.

USING THE AUX INPUTS

These auxiliary inputs will accept outputs from any extra audio components you may have, such as a second tuner or CD-player. Note, however, that a turntable can not be connected to these jacks as the internal circuitry does not provide the necessary RIAA equalization.
These terminals can also be used to connect the audio outputs of stereo audio-visual equipment such as a hi-fi video cassette recorder LaserVision player or CD video combination player.

FRONT PANEL CONTROLS AND THEIR FUNCTIONS

The Front Panel illustration is provided on page 44.

❶ **POWER switch and indicator:** Pressing this switch turns power on, causing the POWER indicator to light. To turn the unit off, press again.

❷ **TONE BYPASS switch:** Press this switch to bypass the tone control circuitry, routing the signal directly to the output stage of the CX-50 to obtain the purest sound. Any equalization settings made with the tone controls are canceled when this switch is pressed to ON and effective only when it is in the OFF position.

❸ **CD DIRECT switch and indicator:** Allows you to route the CD input signal directly to the CX-50 output stage, bypassing the input selectors, the tone controls, subsonic filter and the mode, loudness and balance control circuits for the purest possible sound.

NOTE:

If the LOUDNESS control is currently being used, pressing CD DIRECT will have the effect of suddenly raising the volume.

❹ **Input selectors and indicators:** To select the desired source for listening, press the corresponding input selector. Its indicator will light.

❺ **VOLUME control:** This knob adjusts the overall sound level. Turn clockwise to raise volume.

❻ **PHONES jack:** Plugging in headphones here mutes the output to the power amplifier for private listening.

❼ **Tone controls:** These three controls allow you to adjust the tonal quality of the sound according to source and speaker characteristics, room acoustics and personal preferences.

A flat response (i.e. no equalization effect) is obtained in the center DEFEAT position. The turnover frequencies for the three controls are:

BASS: 350Hz MID: 1kHz TREBLE: 3.5kHz

❽ **SUBSONIC FILTER switch:** Activates circuitry which eliminates ultra-low frequency signals caused by turntable rumble or warped records. Such interference drains amplifier power and may even harm speakers if not attenuated.

❾ **REC OUT selector:** Determines which source will be recorded by the connected tape and/or DAT deck. The signal of the source selected with this rotary switch is fed directly to the rear panel TAPE and DAT REC OUT jacks, regardless of the current input selector setting. This means you can listen to any source while recording another. For details on recording and dubbing, see OPERATIONS.

❿ **BALANCE control:** Adjusts the relative volume of the left and right channels. Use this knob to compensate for stereo imbalance due to the location of the speakers, room acoustics or the source program.

⓫ **MODE switch:** Switches between stereo and mono modes.

⓬ **PHONO MM/MC selector:** Set this switch to the position corresponding to the type of cartridge currently used by your turntable - MM (moving magnet) or MC (moving coil).

⓭ **Continuously variable LOUDNESS control:** This continuously variable loudness control allows you to compensate for the human ear's loss of sensitivity to low and high frequencies at low volumes. It lets you progressively attenuate the middle range in order to retain a natural balance with the bass and treble when listening at low levels. Normally, this knob should be set to the FLAT position. See next page for operation details.

OPERATIONS

LISTENING

1. The component(s) you wish to listen to should be turned on before powering up the CX-50.

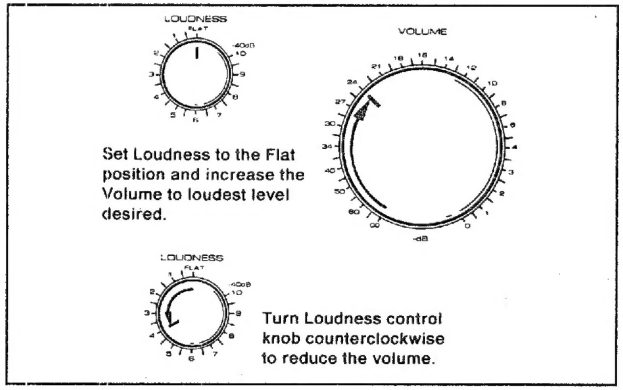
2. Making sure that the volume control is set to minimum level, press the CX-50 POWER switch, then turn on your power amplifier.

3. Select the desired program source by pressing the appropriate input selector and activate the selected component.

4. Adjust the VOLUME, LOUDNESS, BALANCE and tone controls as desired.

LOUDNESS ADJUSTMENT

When listening at low volume levels, adjust LOUDNESS by first setting this knob to the FLAT position and the VOLUME control to the maximum desired listening level. Then turn the LOUDNESS knob counterclockwise to reduce overall volume while retaining a natural sound.



AUDIO RECORDING

Audio sources or the sound-track of video sources can be recorde either with a connected DAT/cassette deck.
Since the source signal selected with the REC OUT selector is alwa present at both rear panel pairs of REC OUT jacks, recording is possible simultaneously with both connected decks (cassette recorder(s), DAT deck(s), etc.). To record from TAPE to DAT or vic versa, see "DUBBING" on next page.

1. Select the source you wish to record from with REC OUT.

2. To confirm the source, press the corresponding INPUT SELECTO

3. Activate the program source, adjust the recording level on you deck(s), then start recording. (If your tape deck has three-head monitoring capability, you can listen to the sound just recorded by pressing the input selector for that deck.)

4. While recording, you can listen to any other component without influencing the quality of the recording by simply pressing that component's input selector.

DUBBING

Dubbing, i.e. the copying of tapes or parts of tapes from one deck to another, is performed in basically the same manner as normal source recording. The REC OUT selector determines from which of two connected decks the recording will be made.

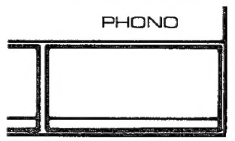
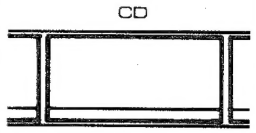
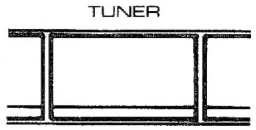
1. Select the source tape deck with REC OUT (TAPE or DAT).

2. To monitor the sound during recording, also press the corresponding input selector (TAPE or DAT).

3. Start playback of the tape to be copied, adjust the recording level on the other deck, then start recording. (Again, if the recording tape deck has three-head monitoring capability, you can listen to the sound just recorded by pressing the input selector for that deck.)

4. During dubbing, you can listen to any other component without adverse effect on the recording by pressing that component's input selector.

Independent Recording and Listening Examples

ACTION	INPUT SELECTOR	REC OUT
Listening to a record via the speakers while recording an AM/FM broadcast.		
Listening to a CD while recording it.		
Listening to an AM/FM broadcast while "dubbing" a tape from DAT to TAPE.		

TROUBLESHOOTING

Before assuming that your amplifier is faulty, check the following list. If you still have any doubts or questions, contact your nearest YAMAHA dealer.

Symptom	Possible cause	Remedy
No power even when the POWER switch is ON.	● The power cord is not plugged in securely.	● Plug in securely.
No sound is heard.	● The wrong source is selected.	● Press the input selector for the desired source.
	● Power amp connections are not secure.	● Properly plug in connection cord.
	● Source input connections are not secure.	● Properly plug in connection cord.
One channel sounds louder than the other.	● Left/right channels out of balance.	● Adjust the BALANCE control.
Sound from MC cartridge too low.	● PHONO MM/MC selector set to MM.	● Push in this switch to the MC position.
A loud humming sound is heard when PHONO is selected.	● Turntable is not properly grounded.	● Connect the turntable's ground wire to GND (or disconnect if this gives better results).
Recording not possible.	● REC OUT selector improperly set.	● Switch REC OUT to the source you want to record

SPECIFICATIONS

Input Sensitivity/Impedance		
Phono MC		100μV/100Ω
Phono MM		2.5mV/47kΩ
CD/TUNER		150mV/50kΩ
AUX/TAPE		150mV/47kΩ
Input Sensitivity (New IHF)		
Phono MC		33μV
Phono MM		0.83mV
TAPE/DAT/AUX/TUNER/CD/PHONO		50mV
Maximum-Input Signal		
1kHz, THD, Phono MC		7mV
1kHz, THD, Phono MM		170mV
Output Level/Impedance		
REC OUT		150mV/770Ω
PRE OUT		1.5V/47Ω
Headphone Jack Rated Output/Impedance		
0.1% THD, RL = 150 ohms		4.2V/82Ω
Frequency Response Tone Bypass ON		
TAPE/DAT/AUX/TUNER/CD/PHONO	(20Hz ~ 20kHz)	0±0.2dB
RIAA Equalization Deviation		
20Hz ~ 20kHz, Phono MC/MM		±0.3/±0.2dB
10Hz ~ 100kHz, Phono MM		±0.5dB
20Hz ~ 100kHz, Phono MC		±0.5dB
Total Harmonic Distortion (20Hz ~ 20kHz)		
Phono MC to REC OUT, 3V		0.002%
Phono MM to REC OUT, 3V		0.002%
TAPE/DAT/AUX/TUNER/CD/PHONO to PRE OUT, 3V		0.002%
Intermodulation Distortion		
PRE OUT, 5V		0.002%
Signal to Noise Ratio (IHF-A-Network)		
Phono MC (500μV Input Shorted)		84dB
Phono MM (5mV Input Shorted)		94dB
TAPE/DAT/AUX/TUNER/CD/PHONO (shorted)		106dB
CD DIRECT		107dB

Signal to Noise Ratio (New IHF)		
Phono MC		79dB
Phono MM		80dB
TAPE/DAT/AUX/TUNER/CD/PHONO		92dB
Residual Noise (IHF-A-Network)		8μV
Channel Separation Vol Max		
Phono MC, MM input shorted, 1kHz/10kHz		80dB/70dB
CD/TUNER		90dB/70dB
5.1kΩ terminated, AUX/TAPE 1kHz/10kHz		68dB/48dB
Tone Control Characteristics		
BASS	boost/cut	±10dB (20Hz)
	turnover frequency	350Hz
TREBLE	boost/cut	±10dB (20kHz)
	turnover frequency	3.5kHz
MID	control range	±10dB (1kHz)
Filter Characteristics		
Subsonic		15Hz, −12dB/oct
Continuous Loudness Control (Level related equalization)		
Attenuation		−40dB (1kHz)
Gain tracking error (0 ~ −60dB)		2dB
Power Supply		Europe AC220V, 50Hz U.K. AC240V, 50Hz
Power Consumption		30W
Dimensions (W x H x D)		435 x 83 x 298mm
Weight		4.2kg

Specifications subject to change without notice.

YAMAHA

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